

Express Mail No.: EV291754471US  
Appl. No.: 09/988,847  
Amdt. dated April 15, 2003  
Reply to Office Action of March 18, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

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Claim 1 (Previously Amended) A ~~method~~ metallic catalytic particle for selectively producing single-walled carbon nanotubes, comprising:

~~contacting, in a reactor cell, metallic catalytic particles consisting essentially of a Group VIII metal, excluding iron, and a Group VIb metal with an effective amount of a carbon-containing gas at a temperature sufficient to catalytically produce carbon nanotubes, wherein a substantial portion of the carbon nanotubes are single-walled nanotubes.~~

Co and Mo in a ratio of one part Co to at least two or more parts of Mo; and

a support material, and wherein the Co, Mo and support material are combined to have a particulate form.

Claim 37 2 (Currently Amended) The metallic catalytic particle of claim 1 further comprising an additional Group VIII metal.

Claim 38 3 (Currently Amended) The metallic catalytic particle of claim 1 further comprising an additional Group VIb metal.

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39 4 (Currently Amended) The metallic catalytic particle of claim 1 wherein the support material is selected from the group consisting of silica, MCM-41, alumina, MgO, ZrO<sub>2</sub>, aluminum-stabilized magnesium oxide, and molecular sieve zeolites.


40 5 (Currently Amended) The metallic catalytic particle of claim 1 comprising from about 1% to about 20% by weight of Co and Mo.

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Claim ~~41~~ 6 (Currently Amended) A metallic catalytic particle for selectively producing single-walled carbon nanotubes, comprising:

at least one of Ru, Rh, Pd, Ir, Pt, at least one Group VIb metal, and  
a support material, combined to have a particulate form.

Claim ~~42~~ 7 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 wherein the at least one Group VIb metal is selected from the group consisting of Cr, Mo and W.

 Claim ~~43~~ 8 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising Ru.

Claim ~~44~~ 9 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising Rh.

Claim ~~45~~ 10 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising Pd.

Claim ~~46~~ 11 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising Ir.

Claim ~~47~~ 12 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising Pt.

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Claim ~~48~~ 13 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 wherein the support material selected from the group consisting of material of silica, MCM-41, alumina, MgO, ZrO<sub>2</sub>, aluminum-stabilized magnesium oxide, and molecular sieve zeolites.

Claim ~~49~~ 14 (Currently Amended) The metallic catalytic particle of claim ~~41~~ 6 comprising from about 1% to about 20% by weight of the at least one Ru, Rh, Pd, Ir and Pt and the at least one Group VIb metal.

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Claim 50 15 (Currently Amended) A metallic catalytic particle for selectively producing single-walled carbon nanotubes comprising:

at least one Group VIII metal, excluding Fe, at least one of Cr, Mo and W, and a support material, and wherein the Group VIII metal, the at least one of Cr, Mo and W, and the support material are combined to have a particulate form, excluding a metallic catalytic particle consisting of the support material and Co and W or Co and Mo.

Claim 51 16 (Currently Amended) The metallic catalytic particle of claim 50 15 wherein the at least one Group VIII metal is selected from the group consisting of Co, Ni, Ru, Rh, Pd, Ir and Pt.

Claim 52 17 (Currently Amended) The metallic catalytic particle of claim 50 15 comprising Cr.

Claim 53 18 (Currently Amended) The metallic catalytic particle of claim 50 15 comprising W.

Claim 54 19 (Currently Amended) The metallic catalytic particle of claim 50 15 comprising Mo.

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Claim 55 20 (Currently Amended) The metallic catalytic particle of claim 50 15 wherein the support material selected from the group consisting of material of silica, MCM-41, alumina, MgO, ZrO<sub>2</sub>, aluminum-stabilized magnesium oxide, and molecular sieve zeolites.

Claim 56 21 (Currently Amended) The metallic catalytic particle of claim 50 15 comprising from about 1% to about 20% by weight of the at least one Group VIII metal and the at least one of Cr, Mo and W.

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Claim 57 22 (Currently Amended) A metallic catalytic particle for selectively producing single-walled carbon nanotubes, comprising:

Co and Mo in a ratio of one part Co to at least two or more parts of Mo, and a silica support material, wherein the Co, Mo and silica support material are combined to have a particulate form.

Claim 58 23 (Currently Amended) The metallic catalytic particle of claim 57 22 further comprising an additional Group VIII metal.

Claim 59 24 (Currently Amended) The metallic catalytic particle of claim 57 22 further comprising an additional Group VIb metal.

Claim 60 25 (Currently Amended) The metallic catalytic particle of claim 57 22 comprising from about 1% to about 20% by weight of Co and Mo.

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